

The Quality of e-Village Budgeting Service : An Empirical Research in Banyuwangi, Indonesia

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Abstract - *Electronic Village Budgeting (e-VB) is an information system of village budgeting owned by Banyuwangi District. But at the beginning of the implementation of e-VB, there were several errors and constraints experienced by users so that an evaluation is needed to measure the extent of the quality of e-VB services. To measure the quality of e-VB service, this research used 33 attributes from 6 dimensions of e-GovQual; ease of use, trust, functionality of the interaction environment, reliability, content and performance of information, and citizen support. While the Importance Performance Analysis (IPA) method is used to map the services performance based on the level of user importance. Respondents in this research were 44 respondents spread across 22 villages in Kabat and Licin sub-Districts. Based on the results of e-GovQual analysis was known that the quality of service performance is 3.16. This shows that the performance of the e-VB service is good according to the user's perception. However, based on the assessment of user importance of 3.45, it creates a gap value between performance and importance of -0.29, indicating that the quality of e-VB services is good, but has not fulfilled the user's importance. Based on the results of the IPA quadrant analysis, it produces several attributes that need a special priority for improvement; providing informed consent, accessibility of site, and loading speed. The results of the research are expected to help the provider of e-VB to be able to provide services that are in accordance with the user's importance.*

Keywords – *Service Quality, e-Government, e-GovQual, IPA*

I. INTRODUCTION

The use increasingly of advanced Information and Communication technology (ICT) creates extensive benefits in accessing, managing and utilizing information quickly and accurately [1]. By the advancement of information technology, the government can take advantage of the use of technology to assist the administration of Government's information. The issuance of Presidential Instruction (Inpres) No. 3 of 2003 concerning policies and strategies for developing e-Government has become the beginning of the use of information technology in the Indonesian government. The Inpres emphasizes the importance of the benefits of ICTs in information governance in carrying out more effective and efficient government [2]. The application of e-Government is an effort of the government in providing convenience to the public in information accessing, so that the public can supervise policies and activities carried out by the government [3].

The Government of Banyuwangi in realizing Presidential Instruction No. 3 of 2003 have carried out e-Government development. One manifestation of e-Government development in Banyuwangi is the application of e-Village Budgeting (e-VB). E-VB is an information system that synergizes finance and development at the village level, so that on the district level it can monitor and supervise village budget funds [4]. At the present, 189 villages in Banyuwangi have implemented e-VB. The users of e-VB are financial managers and operators of the Budget Work Plan (BWP) in the village [5]. E-VB facilitates the management of village funds starting from planning, implementation, administration, reporting and accountability [6].

In this case, the government of Banyuwangi need to evaluate the quality of e-VB services. Evaluation of service quality is a measurable activity for developing and improving services [7]. Referring to Banyuwangi Regent Regulation No. 47 of 2012, to improve the quality of information services to the public, regional apparatus agencies that handle the affairs of the field of communication and information must evaluate the preparation, implementation and development of information services. Evaluation must also be conducted regularly to optimize public services according to East Java Governor Regulation (Pergub) number 31 of 2013. Results of the evaluation of the service quality is a number of the service quality based on the user's perception which can be a basic of service development and improvement to the providers.

The evaluation of service quality can be measured using several methods, namely, Service Quality (ServQual), Website Quality (WebQual) and e-Government Quality (e-GovQual) [8]. ServQual is a service quality assessment method developed to measure the gap between reality and user expectations for services received [9]. ServQual is built by five dimensions; tangible, reliability, responsiveness, assurance, and empathy [9]. WebQual is a method of measuring website quality based on the perceptions of end users [10]. WebQual 4.0 is built by 3 dimensions; usability, information quality, and service interaction quality [10]. While e-GovQual is a method of measuring the quality of government website services based on the perceptions of end users [11]. E-GovQual has 6 dimensions of assessment; ease of use, trust, functionality of the interaction environment, reliability, content and appearance of information, and citizen support [11].

The choice of evaluation method for service quality must be in accordance with the services which will be evaluated. The evaluation of the quality of e-VB services is more appropriate to use the e-GovQual method. The e-GovQual method is built to improve the ability of electronic services in government institutions to encourage people to use the services optimally [11]. The results of using the e-GovQual method can be obtained by the level of gap between service performance and user's importance [12]. Based on the value of service performance with the importance value, it can use the Importance Performance Analysis (IPA) method to find out service attributes that have not been good and needs improvement prioritized. IPA is a method of valuation analysis that uses importance and performance levels to measure the quality of a service based on the perceptions of end users [13]. The IPA method has 3 analyzes; the level of conformity analysis, gap level analysis, and quadrant analysis [13]. By using quadrant analysis on the IPA method, it can be seen that the attributes of e-Government services need to be improved based on their priority scale [12].

Based on the problem description that have been explained, it is necessary to evaluate the quality of e-VB services using the attributes of the e-GovQual assessment and priority scale of improvement using IPA assessment. Evaluation of service quality is based on perceptions of service users, both financial managers and RKA operators in the village. The evaluation results will explain the assessment of the quality of services provided and the priority scale of recommendations for e-VB services. It is expected that the evaluation results and priority scale of recommendations can provide optimal improvement and development suggestions to the e-VB service providers.

II. THEORITICAL BACKGROUND

A. E-Government

E-Government is the use of ICTs which can improve relations between government and other parties in which will encourage new ways of leadership, discussing and establishing strategies, business transactions, listening to citizens and communities and the new ways of organizing and delivering information [14]. E-Government can provide convenience to the public to access information, so that the public can supervise policies and activities carried out by the government [3].

B. E-Village Budgeting

E-VB is the one example of innovation by the Government of Banyuwangi towards transparency in budgeting and monitoring development in the villages. E-VB is an information system that synergizes finance and development at the village level, so that at the district level, it can monitor and supervise village budget funds [4]. E-VB can be accessed online using a web browser. The users of e-VB are financial managers and RKA operators in the village [5]. In general, the e-VB home page consists of three frames which can be seen in Figure 1. The frame includes frame header, frame navigation, and frame content.

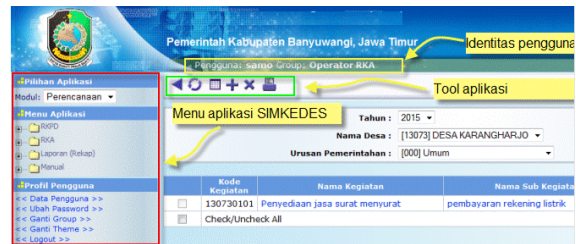


Figure 1 E-Village Budgeting [4]

C. E-GovQual

E-GovQual is a method of measuring the quality of government website services based on the perceptions of end users [11]. The e-GovQual method has the initial concept of 47 attributes with 6 dimensions as shown in Figure 2.

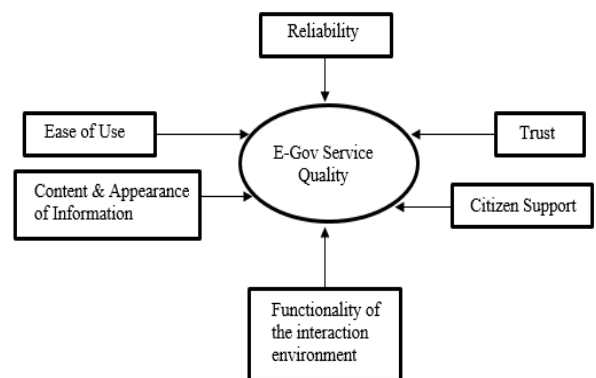


Figure 2 Concept of E-GovQual [11]

1. Ease of Use

This dimension of ease of use can be interpreted as how easily people can interact with e-Government sites [11].

2. Trust

Trust dimension can be interpreted as the trust of users of e-Government sites be able to provide freedom from the risk of errors during the service process [11]. This dimension consists of protecting privacy and ensuring user safety during the service process [11].

3. Functionality of the Interaction Environment

The dimension of functionality of the interaction environment refers to the availability, convenience, and assistance to users during the form filling process [11].

4. Reliability

Reliability is defined as the public's belief in e-Government sites in providing true and timely services [11]. Reliability refers to technical functions that are directly related to accessibility, availability and timeliness of services provided [11].

5. Content and Appearance of Information

Dimension of the content and appearance of information refers to the quality of the content of

information provided to users and the design of information display in the form of precise color, graphics, and page size of the website [11].

6. Citizen Support

Citizen support refers to the assistance provided by service providers to service users in information retrieval or during the transaction process [11].

D. Importance Performance Analysis (IPA)

IPA is a method of analyzing the assessment of goods or services that is evaluated based on importance and performance level provided by end users [13]. IPA has 3 assessment analyzes; the level of conformity analysis, gap level analysis and quadrant analysis [13]. The level of conformity analysis is used to measure how appropriate the services provided with the user importance. Gap level analysis is used to measure the difference in service performance with the user importance. Quadrant analysis is used to identify attributes that need to be prioritized for improvement and development to improve the quality of services provided. The IPA quadrant analysis can be seen in Figure 3.

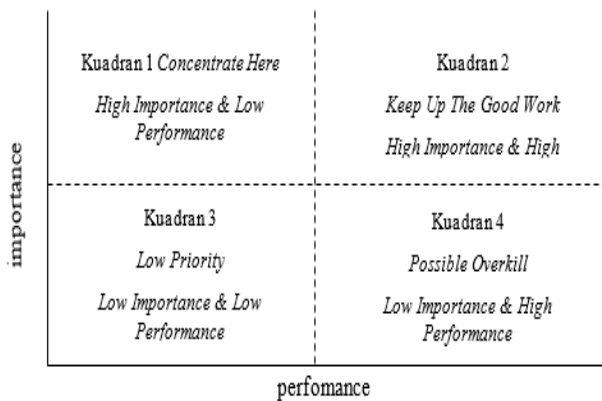


Figure 3 Cartesian Diagram of IPA
(Source: SFS University of Jember, 2018)

III. METHODS

The stages of the research methodology are the sequence of steps taken during the research. The stages in this research can be seen in Figure 4.

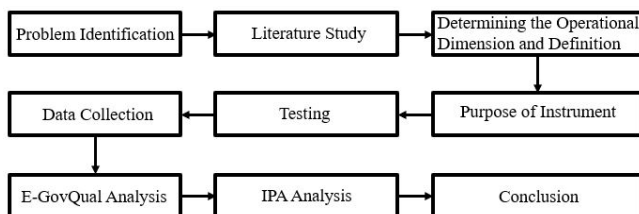


Figure 4 Research Phase

A. Problem Identification

Problem identification is the process of determining the research topic and the reason why the topic specified needs to be examined. Stages of problem identification are carried out to obtain information about the problems

found. The problems in this research can be identified through interviews and discussions with e-VB service providers.

B. Literature Study

Literature study is an activity to gather theoretical frameworks in accordance with research. It is obtained through books, journals, government documents and previous research related to the implementation of e-VB, e-GovQual and IPA.

C. Determining the Operational Dimension and Definition

E-GovQual in the initial concept has 47 attributes in 6 dimensions, but not all e-GovQual attributes are used. The number of attributes used is adjusted to the application of the object to be studied. Determining of the e-GovQual attribute to be used is done by discussion with the e-VB service provider. Based on the results of discussion with the e-VB service provider, it was agreed to use 33 e-GovQual attributes which can be seen in Table 1.

Table 1 Operational Dimension and Definition

(Source: Papadomichelaki dan Mentzas [11])

Dimension	Dimension Definition	Code	Attribute
Ease of Use	How easy is e-VB service used by the users	EU1	Website structure
		EU2	Easy to remember URL
		EU3	Personalization of information
Trust	User trust in service capabilities to protect information that users have	TR1	Not sharing personal information with other
		TR2	Secure archiving of personal data
		TR3	Providing informed consent
		TR4	Procedure of acquiring username and password
		TR5	Correct transaction
		TR6	Access control
Reliability	Refers to technical functions of services that are directly related to accessibility and availability of services	RB1	Ability to perform the promised service accurately
		RB2	In time service delivery
		RB3	Accessibility of site
		RB4	Browser-system compatibility
		RB5	Loading/transaction speed

Dimension	Definition	Code	Attribute
Functionality of the Interaction Environment	Refer to availability, convenience and help online	FIE1	Automatic calculation of forms
		FIE2	Adequate response format
Content and appearance of information	Refers to the quality of information provided and display designs such as colors, graphics, web page size	CAI1	Data completeness
		CAI2	Data accuracy and conciseness
		CAI3	Data relevancy
		CAI4	Updated information
		CAI5	Linkage
		CAI6	Ease of understanding/interpretable data
		CAI7	Colors
		CAI8	Graphics
		CAI9	Size of web pages
Citizen Support	Refer to assistance services that are given to help users find information	CS1	User friendly guidelines
		CS2	Frequently asked questions
		CS3	Transaction tracking facility
		CS4	Problem solving
		CS5	Prompt reply to customer inquiries
		CS6	Knowledge of employees
		CS7	Courtesy of employees
		CS8	Ability of employees to convey trust and confidence

D. Purpose of Instrument

The research instrument used in this research was a questionnaire which is made by researcher using the *e-GovQual* approach. The distribution of questionnaires was conducted to know the knowledge and experience of users related to the use of e-VB services. At this stage, the *e-GovQual* attribute has been determined to be used in the research. From the *e-GovQual* attribute will be developed into questionnaire questions. The questionnaire is a collection of questions filled out by respondents. Questionnaire is needed to support the data collection process. In this research, the questionnaire was divided into 2 parts; the importance questionnaire and the performance questionnaire.

E. Testing

The Test of questionnaires instrument carried out by testing the validity and reliability. The testing can be considered to be valid when providing accurate and accurate measurement results. While the testing is considered to be reliable when the smaller the measurement error. If the questionnaire has been valid and reliable, the questionnaire can be distributed to respondents and can be used to collect data.

F. Data Collection

Data collection is done by spreading questionnaires that have been declared valid and reliable. The questionnaires were distributed to respondents; BWP operators and the financial managers of the village. The total respondents in this research were 44 users of e-VB consisting of each BWP operator and the financial managers of the village from 22 villages in Kabat and Licin Districts, Banyuwangi.

G. E-GovQual Analysis

The *e-GovQual* analysis is used to measure the quality of e-VB services according to user perceptions. The collected data from performance questionnaires and importance that contain *e-GovQual* attributes are analyzed by calculating the difference between the average performance value and the average value of the importance of each attributes.

H. IPA Analysis

This research used 2 IPA analysis; the level of conformity analysis and quadrant analysis. The level of conformity analysis was used to measure how appropriate the services provided with the importance of users. While Quadrant Analysis was used to find out the components or attributes of the website that need to be prioritized for improvement.

IV. RESULT

This chapters that explained about the research results, how this research answered the research problems as well as the objectives and benefits of the research that has been determined at the beginning of this research.

A. Instrument Test Results

Based on the results of the instrument test conducted, in this aspects are validity and reliability test using a significance level of 95% and an error rate of 5%, it was found r counted from all the questionnaire statement items $>$ from r table. Then, it was stated that all items of the questionnaire statement were VALID. The reliability test obtained that Cronbach's Alpha values of all research variables were greater than the Cronbach's Alpha value (minimum) 0.6. Therefore, the instruments used in this research were RELIABLE on all the items in each variable statement.

B. E-GovQual Analysis Result

E-GovQual analysis had done by looking for gaps between perceived service performance and service importance using the average value of performance and importance listed in Table 2.

Table 2 Result of the Gap from e-GovQual Analysis

No	Variable	Performance	Importance	Gap
1	EU	2.83	3.15	-0.32
2	TR	3.19	3.61	-0.42
3	FIE	3.38	3.64	-0.26
4	RB	3.08	3.46	-0.37
5	CAI	3.26	3.37	-0.11
6	CS	3.15	3.48	-0.34
e-GovQual		3.16	3.45	-0.29

Based on the result of the Gap from e-GovQual Analysis in Table 2, total performance value on all e-GovQual variables are above the Likert score of 3 (good), which is equal to 3.16. This result shows that the e-VB service has good performance according to the user's perception. However, based on the total score of importance assessment of 3.45, it creates a gap between performance and interests of -0.29. The negative value gap indicates that service performance still does not fulfill the importance of users.

C. Importance Performance Analysis

The level of conformity analysis is used to measure how appropriate the services provided with the user importance listed in Table 3.

Table 3 Result of the Conformity form IPA

No	Variable	Performance	Importance	Conformity
1	EU	2,83	3,15	89,85%
2	TR	3,19	3,61	88,38%
3	FIE	3,38	3,64	92,87%
4	RB	3,08	3,46	89,03%
5	CAI	3,26	3,37	96,75%
6	CS	3,15	3,48	90,53%
Conformity		3,16	3,45	91,59%

Based on the result of the conformity from IPA in Table 3, total performance value on all e-GovQual variables are above the Likert score of 3 (good), which is equal to 3.16. This result shows that the e-VB service has good performance according to the user's perception. However, based on the total score of importance assessment of 3.45, it creates conformity value of 91,59%. The conformity value under 100% indicates that service performance still does not fulfill the importance of users.

Quadrant analysis is used to identify attributes that need to be prioritized for improvement and development to improve the quality of services provided. The result of the IPA quadrant analysis can be seen in Figure 5.

1. Quadrant 1

The e-GovQual attributes in this quadrant had a high level of importance, but the level performance was low. Attributes in this quadrant were providing informed consent (TR3), accessibility site (RB3), and loading/transaction speed (RB5).

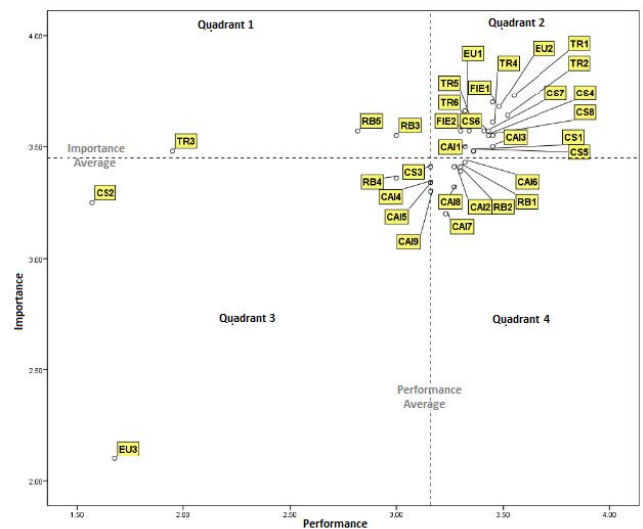


Figure 5 Result of the IPA Quadrant Analysis

2. Quadrant 2

The e-GovQual attributes in this quadrant had a high level of importance and level of performance. Attributes in this quadrant were website structure (EU1), easy to remember URL (EU2), not sharing personal information with other (TR1), secure archiving of personal data (TR2), procedure of acquiring username and password (TR4), correct transaction (TR5), access control (TR6), automatic calculation of form (FIE1), adequate response format (FIE2), data completeness (CAI1), data relevancy (CAI3), user friendly guidelines (CS1), problem solving (CS4), prompt reply to consumer inquiries (CS5), knowledge of employees (CS6), courtesy of employees (CS7), and ability of employees to convey trust and confidence (CS8).

3. Quadrant 3

The e-GovQual attributes in this quadrant had a low level of importance and the level of performance was also low. Attributes in this quadrant were personalization of information (EU3), browser-system compatibility (RB4), updated information (CAI4), linkage (CAI5), size of web pages (CAI9), frequently asked questions (CS2), and transaction tracking facility (CS3).

4. Quadrant 4

The e-GovQual attributes in this quadrant had a low level of importance but the level of performance was high. Attributes in this quadrant were access control (TR6), ability to perform the promised service accurately (RB1), in time service delivery (RB2), data accuracy and conciseness (CAI2), ease of understanding/ interpretable data (CAI6), colors (CAI7), graphics (CAI8).

V. CONCLUSION

Based on the results of the research that has been done, it can be concluded as follows:

1. The quality of e-VB services evaluated by the *e-GovQual* method consists of 6 variables; *ease of use*, *trust*, *functionality of the interaction environment*, *reliability*, *content and appearance of information*, and *citizen support* with a total of 33 attributes. The total performance value on all *e-GovQual* variables are above the Likert score of 3 (good), which is equal to 3.16. This result shows that the e-VB service has good performance according to the user's perception. However, based on the total score of importance assessment of 3.45, it creates a gap between performance and interests of -0.29. The negative value gap indicates that service performance still does not fulfill the importance of users. Based on the suitability analysis between performance and importance, the conformity value is 91.59%. Conformity below 100% indicates that service performance still does not fulfill the importance of users. This means that for overall, the performance of the e-VB service is good, but it still does not fulfill the importance of users.
2. The quadrant analysis on the IPA method produced priority improvement scales that can be a reference for e-VB service providers to improve service quality. There are 3 attributes that need to be the main priority for improvement. They are providing informed consent (TR3), accessibility site (RB3), and loading/transaction speed (RB5). There are 17 attributes that have had high performance and fulfilled the user's importance. They are website structure (EU1), easy to remember URL (EU2), not sharing personal information with other (TR1), secure archiving of personal data (TR2), procedure of acquiring username and password (TR4), correct transaction (TR5), access control (TR6), automatic calculation of form (FIE1), adequate response format (FIE2), data completeness (CAI1), data relevancy (CAI3), user friendly guidelines (CS1), problem solving (CS4), prompt reply to consumer inquiries (CS5), knowledge of employees (CS6), courtesy of employees (CS7), and ability of employees to convey trust and confidence (CS8).

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